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SB SAT @ AMSAT $ANS-240.01
PHASE-3D STATUS REPORT

HR AMSAT NEWS SERVICE BULLETIN 240.01 FROM AMSAT HQ
SILVER SPRING, MD AUGUST 28, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-240.01

Phase-3D Engineering Model Construction Update

Dick Jansson (WD4FAB), AMSAT-NA Vice President for Engineering, reports that teams from AMSAT-DL and AMSAT-NA are well along in their efforts to construct an Engineering Model of the Phase-3D spaceframe in Germany. During the past two months, AMSAT-DL President Dr. Karl Meinzer (DJ4ZC) along with Werner Haas (DJ5KQ), Konrad Mueller (DG7FDQ), Wilfried Gladish and workers Diana Cronau, Birget Rheil and Anuschka Geis joined forces with Dick and a team of Weber State University (WSU) students to tackle the project at the University of Marburg. The WSU team was led by Ralph Butler and Jaim Parsons. They and their students had also been constructing tooling templates as well as machining various structural parts for the proposed Model. Dick indicates that while some structural parts still remain to be completed on the Model, all the essential structural elements are now in place.

"It was a tremendous effort," Dick noted upon his return to the United States last Monday. He went on to say that, "We've now confirmed that our structural designs can be successfully manufactured into a lightweight flight spaceframe."

During the Marburg effort, the team also took delivery of flight hardware for the Phase-3D electronic module cases. These cases are constructed in kit form and contain fully interchangable parts that will allow assembly of any one of five different versions of the design. The cases will ultimately house the vital electronic components of the Phase-3D satellite. All of the module case work was done by WSU students.

In the course of the Model's construction, Dick reports the team racked up some rather impressive statistics. Together, they drilled over 9,900 holes and performed over 19,000 deburring (finishing) operations on the structure. The Equipment Panels, alone, had over 3,200 holes drilled in them. The high point of the project came when the internal Heat Pipes (a part of the Phase-3D thermal balancing structure) were successfully mated with the surfaces of the interior Equipment Panels -- on the very first try! Dick likened this feat to someone "bowling six 300 games in a row". He confirmed that such success was a direct result of the professional approach employed by each member of the team.

Construction of the Engineering Model spaceframe marks a major milestone in the Phase-3D development effort. It provides designers of the "all important" electronic, propulsion and attitude control systems with a "hands on" platform to test the "fit-and-form" of their designs, many of which are also now nearing completion. It also gives the WSU students a massive "template" for building the actual flight model spaceframe, a task that's now scheduled to begin in earnest starting this September at WSU.

[The AMSAT News Service (ANS) would like to thank Dick Jansson (WD4FAB) and Keith Baker (KB1SF) for this bulletin item.]

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SB SAT @ AMSAT $ANS-240.02
AMSAT OPS NET SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 240.02 FROM AMSAT HQ
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Current AMSAT Operations Net Schedule For AO-13

AMSAT Operations Nets are planned for the following times. Mode-B Nets are conducted on AO-13 on a downlink frequency of 145.950 MHz. If, at the start of the OPS Net, the frequency of 145.950 MHz is being used for a QSO, OPS Net enthusiasts are asked to move to the alternate frequency of 145.955 MHz

Date	UTC	Mode	Phs	NCS	Alt NCS
11-Sep-93	0730	B	159	VE2LVC	W9ODI
18-Sep-93	1515	B	96	N7NQM	W5IU
2-Oct-93	1400	B	160	WA5ZIB	WJ9F

Any stations with information on current events would be most welcomed. Also, those interested in discussing technical issues or who have questions about any particular aspect of OSCAR statellite operations are encouraged to join the OPS Nets. In the unlikely event that either the Net Control Station (NCS) or the alternate do not call on frequency, any participant is invited to act as the NCS.

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Slow Scan Television on AO-13

SSTV sessions will be held on immediately after the OPS Nets a downlink on a Mode-B downlink frequency 145.960 MHz.

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SB SAT @ AMSAT $ANS-240.03
WEEKLY OSCAR STATUS REPORTS

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Weekly OSCAR Status Reports: 28-AUG-93

AO-13: Current Transponder Operating Schedule:
L QST *** AO-13 TRANSPONDER SCHEDULE *** 1993 Aug 16-Oct 25
Mode-B : MA   0 to MA 60 !
Mode-BS : MA 60 to MA 120 !<- after Aug 30 (hopefully)
Mode-S : MA 120 to MA 145 !<- S transponder; B trsp. is OFF
Mode-S : MA 145 to MA 150 !<- S beacon only
Mode-BS : MA 150 to MA 180 !   Alon/Alat 180/0
Mode-B : MA 180 to MA 256 !
Omnis   : MA 230 to MA 40 ! Move to attitude 210/0, 25-Oct-93
Continuous up-to-date information about AO-13 operations is always available on the beacons at 145.812 MHz and 2400.646 MHz in CW, RTTY and 400 bps PSK. Also, these bulletins are also posted to INTERNET, ANS bulletins, Packet, PACSATs, etc., and can also be found in many inter-national newsletters. [G3RUH/DB2OS/VK5AGR]

MIR: LW2DTZ reports that the new callsigns for the MIR space station are

R0MIR and R0MIR-1 for Personal Message System (PMS). LW2DTZ also says that the packet station appears to be working correctly and the downlink frequency being used is 145.550 MHz FM (simplex). LW2DTZ says that he has not heard any voice operations but the packet operation is working well around the world. He further adds that anybody can work MIR with 10 watts into a omni-directional antenna, e.g., a J-Pole. The signals are very strong as soon as MIR comes over the horizon. [LW2DTZ]

RS-10: WC9C reports that the RS-10 transponder is working just fine, with evening passes still being the best but on the day-time passes during the weekends, there is alot of activity! On or about 18-AUG-93 the CW Robot stopped calling CQ, but the CW transponder is still on. WC9C worked P40P and XE1KK last week. He notes that good downlink signals are possible with as little as 3-5 watts are common. Also, RS-10 is very good bird to work mobile. In another status report from KB0J, he notes that he worked OX3KX right at the end of a RS-10 pass last week. OX3KX was on a downlink frequency of 29.388 MHz, and he was booming in at 57 while K0BJ was very near LOS on the VHF uplink, and just barely getting into RS-10. And finally, KL7JAF wants to let all RS-10 users to be aware that "ALASKA IS ALIVE AND WELL ON RS-10 BUT THAT ON MOST PASSES WE HAVE IT ALL TO OURSELVES EVEN THOUGH THERE IS A WINDOW TO THE LOWER 48 AND THE VE'S. ACTIVE OF LATE ON RS-10 IS KL7ILA, K0MVL/KL7 AND KL7JAF. IF YOU HAVE A PASS THAT INCLUDES US, STAY ON FREQ UNTIL LOS AND WE WILL BE LOOKING FOR YOU..." [WC9C & K0BJ & KL7JAF]

RS-12: G3IOR reports that the sudden drop of magnetic activity and Maximum Usable Frequency (MUF) rise of 19-22 August has brought about some remarkable "sub-horizon" propagation on RS-12, Mode-K. GM4IHJ and G3IOR have been copying excellent signals from both RS-10's and RS-12's 29.407 and 29.357 MHz beacons, respectively, when the satellites have been over Antarctica, southern South America and South Africa, over VE8, KL7 and UA0. Much of the time the 29 MHz path has been in common with the RS-12 21.210 - 21.250 MHz uplink path, so stations have been worked when the satellite is well below the user horizons by as much as -50 degrees elevation! Good QSO's by G3IOR included K4ZC (NC), VE2GSX, LU2NI and PJ2MI. Many other stations were copied coming in on the RS-12 downlink who were oblivious to this fact, as they were working terrestrial F2 DX within the RS-12 uplink passband. Also, RK3KPK has reactivated the RS-12 ROBOT. It is noticeable that the ROBOT requires requires a near perfect 1:3 Dot:Dash ratio time for it to respond to callers. While it is at high angles of elevation or along dark paths, it responds well. When in high MUF conditions, particularly at low elevation angles or sub-horizon it is almost impossible to get response although ones signal actuates the downlink. This is thought to be due to the multi-path changing the Dot:Dash ratio from 1:3 to 1+n:3+n, in other words, difficult to read by the ROBOT. By adding weighting to the key to give more abrupt dots, e.g. clipping them, QSO's may be made. This, together with studies of the erratic Doppler variations during multipath sub-horizon passes might be used as an excellent ionispheric research tool by keen observers. A message to all RS-12 operators. Do not wait for predicted AOS to start your operations, nor give up at the predicted LOS. Look for the beacon or the ROBOT as much as 35 minutes prior to a "pass" and stay with it once the satellite has officially gone "LOS." You will often hear the satellite well outside the normal tracking times, and the chances are that you will get into the transponder too. By this way you may work some surprising DX not normally available on the low orbiting bird. CW activity (best) is centered on 21.215/29.415 MHz and SSB on 21.225/29.425 MHz. Be sure to call "CQ RS-12" to differentiate from F2 QSO makers working direct in the passband. [G3IOR @GB7VLS]

WO-18: Webersat (WO-18) is operating normally. Transmitter output power has been boosted about a watt. [KB7KCL]

The AMSAT NEWS Service (ANS) is looking for volunteers to contribute weekly OSCAR status reports. If you have a favorite OSCAR which you work on a regular basis and would like to contribute to this bulletin, please send your observations to WD0HHU at his CompuServe address of 70524,2272, on INTERNET at wd0hhu@amsat.org, or to his local packet BBS in the Denver, CO area, WD0HHU @ W0LJF.#NECO.CO.USA.NOAM. Also, if you find that the current set of orbital elements are not generating the correct AOS/LOS times at your QTH, PLEASE INCLUDE THAT INFORMATION AS WELL. The information you provide will be of value to all OSCAR enthusiasts.

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